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| Earth Science Mid-Term Review Topics |

**Measurement**

* Volume
* Mass
* Density
* % Deviation (memorize formula, not on ESRT)
* Observations and Inferences
* Converting Units
* Scientific Notation
* Graphing Relationships for all above
* Equations found on p.1 of ESRT

**Latitude and Longitude**

* Direction of lines and how they are measured
* Polar view
* Equatorial view
* Given location name be able to determine lat and long
* Given lat and long determine location name
* Polaris and its relation to observers latitude in Northern Hemisphere
* Shape of Earth
* Balloon lab
* Use of ESRT pages 2, 3, and 5

**Minerals**

* Moh’s Hardness Scale, Be able to determine difference between hard and soft. Knowing hardness of fingernail, penny, iron nail, glass plate, streak plate.
* Luster, Metallic vs. nonmetallic
* Mineral Composition
* Hardness
* Cleavage vs. Fracture
* Distinguishing Characteristics and uses
* Internal arrangement of atoms
* Mineral Lab
* Using ESRT p.16

**Rock Cycle and Rock Types**

* ***Igneous rock***
  + Formation
  + Extrusive
  + Intrusive
  + Corse and fine grain and crystal size
  + Mafic and Felsic
  + Texture
  + How are igneous rocks classified?
  + Determine mineral composition of igneous rock
  + Igneous Rock lab
  + Using p. 6 on ESRT
* ***Sedimentary***
  + Formation
  + Determine texture and classification
  + Clastic
  + Crystalline
  + Bioclastic
  + Sedimentary Rock Lab
  + Use of p. 7 on ESRT
* ***Metamorphic***
  + Formation
  + Foliated, mineral alignment and banding
  + Non-foliated
  + Grain Size
  + Determining parent rock for the metamorphic rock, Vice versa
  + Based on Heat and Pressure what happens to Foliated metamorphic rocks?
  + Use of p. 7 on ESRT
* ***Rock Cycle*** 
  + How all rocks are interrelated
  + Use of p.6 on ESRT

**Weathering/Erosion/Deposition**

* ***Weathering***
  + Defined
  + Physical and chemical
  + Factors of weathering rates
  + Weathering determined by climates and use of graph
  + Sugar Cube lab
  + Agents of weathering: Wind, Water, Gravity, Glaciers, Human
  + Rock and their resistance to weathering based on mineral composition
  + Surface area and its impact on weathering rates
* ***Erosion***
  + Defined
  + Agents of erosion: Wind, Water, Gravity, Glaciers, Human
  + Stream Velocity and particle size ESRT p. 6
  + Stream table lab
  + Factors affecting stream velocity: Discharge, Gradient, Stream channel shape
  + Stream channel profile
  + Where erosion occurs in a stream
  + U-Shape and V-Shape
  + Particle shape for different agents of erosion
* ***Deposition*** 
  + Define
  + Depositional features: Delta, Glacial till, Beaches
  + Depositional rates
  + Particle size as it relates to deposition in streams
  + Sorted sediment or unsorted sediments
  + Drawing stream profile
  + Erosion and depositional rates and features in a stream system
  + Stream table lab

**Earth’s Interior and Heat Transfer**

* ***Earth’s Interior***
  + Using ESRT page 10 to identify distinct characteristics of Earth’s interior
  + Pressure, Temperature, Density, depth, layers, Composition
  + Similarities and differences with 2 types of crust.
  + Lithosphere defined and know its components
  + Asthenosphere and its importance in heat transfer
  + Inferred types of matter for outer and inner core based on seismic activity
* ***Heat Transfer***
  + Conduction
  + Convection and its role in plate tectonics
  + Radiation
  + Thermal energy and how it relates to density and the motion of the particles.
  + Water Tank lab

**Plate Tectonics**

* Use of page 5 on ESRT
* Divergent Plate boundary: features and motions
* Sea floor spreading, old and new crust, mineral alignment based on magnetic polarity
* Convergent Plate boundary: features and motions, subduction zones, mountain building, volcano, ring of fire
* Driving force of plate tectonics
* Connection of plate boundaries and earthquake locations
* Transform plate boundary
* Evidence of plate motion: Puzzle shape, Fossils, Pangea

**Earthquakes**

* Defined
* Seismic Station, Seismograph, Seismogram, Seismologist
* P-wave and S-wave defined and compare/contrast
* Subtracting time
* Use of ESRT page 11
* Locating Epicenter based on information given
* Origin time, wave travel times, epicenter distances from seismic stations
* Travel of P and S waves through the earth and the creation of a shadow zone
* Reading seismogram
* Modified Mercalli Scale